

## CLAIMS OF THE INVENTION

### WE CLAIM:

1. A multi-shot ring airfoil projectile launcher comprising:

a body, said body defining a receiving area for receiving a cartridge comprising a ring airfoil projectile mounted to a housing, said body defining a tubular passage leading from said receiving area through which said ring airfoil projectile is ejected upon firing, said body further defining a chamber leading to said receiving area, said chamber positioned generally opposite said tubular passage,

a breechblock movably positioned in said chamber, said breechblock movable between a retracted position in which is positioned in said chamber away from said receiving area and an forward position in which it is moved towards said receiving area;

a trigger mechanism connected to said breechblock, said trigger mechanism including a firing pin moveable to a position in which it contacts a portion of a cartridge in said receiving area when said breechblock is in said forward position;

an extractor adapted to contact said cartridge when said cartridge is in said receiving area and retain said housing of said cartridge upon firing;

an ejector, said ejector coupled to said breechblock and movable from a first retracted position to a second extended position, said ejector when moved from said first position to said second position pressing downwardly upon a retained housing to force said housing outwardly of said body through an opening therein; and

a follower, said follower coupled to said ejector and configured to move downwardly from a first position to a second position when said ejector is moved to its second position, said follower when moved from its first to its second position adapted to move a cartridge into said receiving area.

2. The projectile launcher in accordance with Claim 1 including a track located in said breechblock and a pin extending from said ejector, said pin engaging said track whereby movement of said breechblock effects said movement of said ejector from its first to its second position.

3. The projectile launcher in accordance with Claim 2 wherein at least a portion of said track slopes downwardly, whereby movement of said breechblock from a first position to a second position causes said ejector to be moved from its first to its second position.

4. The projectile launcher in accordance with Claim 1 wherein said ejector is coupled to said breechblock such that movement of said breechblock to said retracted position causes said ejector to move to said second extended position.

5. The projectile launcher in accordance with Claim 1 including an opening in said body, said opening in communication with said receiving area when said breechblock is moved to said retracted position.

6. The projectile launcher in accordance with Claim 1 wherein is configured to move from its forward to its retracted position by pressure of gas in said receiving area when a cartridge therein is fired with said trigger mechanism.

7. The projectile launcher in accordance with Claim 6 including a spring biasing said breechblock towards its forward position.

8. The projectile launcher in accordance with Claim 1 wherein a grip is connected to said breechblock, said grip movable with respect to said body, permitting a user to move said breechblock manually.

9. In combination, a projectile launcher and a plurality of projectiles to be launched comprising:

a plurality of projectiles each comprising a cartridge including a ring airfoil projectile mounted to a sabot and a housing containing said ring airfoil projectile and sabot, said cartridge having a generally cylindrical shape having a central axis extending therethrough, having a diameter perpendicular to said axis and a length along said axis, said diameter exceeding said length, one or more of said plurality of projectiles located in a magazine, said one or more projectiles oriented so that their central axes are aligned; and

a launcher for launching said projectiles, said launcher including a receiver defining a cartridge receiving area and an elongate passage through which said airfoil and sabot are launched, a breechblock movably located in said receiver, a trigger mechanism connected to said breechblock,

said trigger mechanism for firing a cartridge, said trigger mechanism including a grip extending from said receiver and having a finger-engaging trigger associated therewith, an ejector connected to said breechblock and movable to a position in which a housing is ejected from said receiver when said breechblock is moved from a forward to a retracted position, and a follower connected to said ejector, said follower moving a cartridge from said magazine to said receiving area when said breechblock is moved from its forward to its retracted position.

10. The combination in accordance with Claim 9 wherein said launcher includes a track located in said breechblock and a pin extending from said ejector, said pin engaging said track whereby movement of said breechblock effects said movement of said ejector from its first to its second position.

11. The combination in accordance with Claim 10 wherein at least a portion of said track slopes downwardly, whereby movement of said breechblock from a first position to a second position causes said ejector to be moved from its first to its second position.

12. The combination in accordance with Claim 9 wherein said launcher includes a sabot stripper, said sabot stripper comprising an area of reduced dimension of said passage at an end thereof opposite said receiving area.

13. The combination in accordance with Claim 12 wherein said sabot stripper comprises a generally hollow ring located at said end of said passage, said sabot stripper rotatably connected to said receiver.

14. The combination in accordance with Claim 9 including an extractor connected to said breechblock, said extractor adapted to engage a housing of a cartridge located in said receiving area when said breechblock is in its forward position for securing said housing during firing of said projectile.